

# Work (hygiene)

The article discusses the basic characteristics of work, the possible influence of the health of the organism on the factors of the working environment and prevention of health at work.

## History

One of the founders of occupational medicine and occupational hygiene in our country is considered to be **Prof. MUDr. Jaroslav Teisinger, DrSc.** He founded the first clinic of occupational diseases and the **Institute of Occupational Hygiene and Occupational Diseases**. He built a toxicological information centre and, in cooperation with Jaroslav Heyrovský, the discoverer and founder of polarography and winner of the Nobel Prize in Chemistry in 1959, developed polarographic methods for the determination of lead and nitrobenzene in blood. He also developed a series of *biological exposure tests* in industrial toxicology.

## Job description

When describing the work, we take into account the general **characteristics of the work** (production operations and procedures), **physical load** (dynamic and static components of the workload), **neuropsychological load** (reduced attention, emotional tension), the effect of **physical factors** (temperature, humidity, noise, lighting, vibration, dust, aerosol, radiation), exposure to **chemical substances** (toxic, allergenic, carcinogenic, teratogenic), exposure to **biological factors**, use of personal protective equipment (**PPE**) and **working regime** (night work, overtime).

## Basic concepts

- *workload* - a factor of the working environment acting on a person
- *occupationography* - a descriptive method for analysing and classifying work and workload
- *time analysis of work* - overview of the time distribution and duration of work tasks (record of the duration of individual work activities)
- *work effort* - the body's response to workload (muscular, mental, thermoregulatory, sensory effort)
- *energy expenditure* - metabolic rate at a given workload (measured by indirect calorimetry, Spitzer-Hettinger tables, heart rate and minute ventilation)
- *heart rate* - an indicator of muscular and thermoregulatory effort
- *sweating intensity* - an indicator of thermoregulatory effort
- *Biological Exposure Test (BET)* - a measurable response of the organism to a chemical load
- *biological limit* - an indication of the concentration of a foreign substance or its metabolite in blood or urine that corresponds to a concentration of the foreign substance in air that complies with the NPC

## Health at work

Occupational health is defined as *physical, mental and social well-being*. A healthy worker is the foundation of effective work performance for employers. Workers' health is both protected by the state in the framework of health protection and by an active approach called health promotion.

A suitable working environment is determined by the above mentioned job characteristics.

## Occupational accident

An accident at work is an injury to an employee's health caused by external influences independent of the employee's will. An accident at work is also defined as an injury sustained by an employee in the course of performing work-related tasks.

## Occupational diseases

Occupational diseases are acute poisonings resulting from the adverse effects of chemical substances on health and diseases resulting from the adverse effects of chemical, physical, biological and other harmful influences when they arise under the conditions listed in occupational diseases. Occupational diseases are covered by the insurance company.

The most commonly encountered diagnoses include carpal tunnel syndrome, allergic eczema, scabies, uhlokopian pneumoconiosis, bronchial asthma and others.

## Work-related disabilities

Work-related diseases (WRDs) are diseases that are known to occur with *higher frequency* in a certain group of workers, but cannot be causally linked. Unlike occupational diseases, these diseases are not covered by insurance.

# Occupational health prevention options

Prevention of health damage is an individual and collective priority. Organisations implement technical, technological and organisational measures.

## Technical measures

Technical measures include the reduction of the working environment by technical means. Examples include local extraction, noise control measures, removal of excessive physical and sensory strain, replacement of noisy machinery.

## Technological measures

Technological measures include the removal of harmful physical influences and changes in the materials used. For example, replacing toxic substances with less toxic ones.

## Organisational arrangements

Organisational measures include the development of workplace work schedules, rotation of workers, control and definition of responsibilities of managers, limitation of working hours, etc.

## Links

## Sources

- BENCKO, Vladimír, et al. *Hygiena : Učební texty k seminářům a praktickým cvičením*. 2. edition. Prague : Karolinum, 2002. 205 pp. pp. 129 – 134. ISBN 80-7184-551-5.
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